

Chief Fire Officer: Dave Ramscar

Our Ref : LR/RH

Lincolnshire Fire and Rescue
South Park Avenue
Lincoln
LN5 8ELMr L Rowley IEng AMICE
Senior Project Leader
Communities, Highways & Traffic
Technical Services Partnership
5th Floor
Mill House
Brayford Wharf North
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17 February 2015

Dear Lee,

Lincoln Eastern Bypass (LEB) and Hawthorn Road, Lincoln

Further to our meeting yesterday, I am writing to confirm that I have been contacted by the Hawthorn Road Action Group and as a result commissioned some work internally to look at what impact, if any, there would be on response times for emergency vehicles with the LEB in place and the 'stop' on Hawthorn Road. As part of this work some modelling was undertaken using the Fire Service Emergency Cover (FSEC) toolkit which allows us to predictively model risk, perform quantitative assessment of changes to emergency response, fire appliance numbers and locations, crewing changes, specialist vehicles and other related issues.

In this instance the LEB routing and the stopping up of Hawthorn Road was replicated within FSEC in order to model response times from our two fire station locations within the city namely Lincoln South station on South Park Avenue and Lincoln North station on Nettleham Road. The models were based on travel times between the fire station locations and school locations within the villages of Reepham, Fiskerton and Cherry Willingham. Two models were run for each route to show 1. Travel times using the existing road network, and 2. Travel times with the LEB in place and Hawthorn Road 'stopped'. The results of the models, which are attached to this letter, demonstrated that travel times improved with the exception of Reepham, which remained the same. The models for Reepham used the A158 on both occasions so the times remained the same.



Fire and Rescue worked closely with colleagues from East Midlands Ambulance Service (EMAS) due to both services responding from similar locations. The Ambulance and Fire station are adjacent to each other on South Park Avenue, and Ambulances regularly stand by in Waitrose carpark opposite the Nettleham Road fire station to cover the north of the city and surrounding villages.

If I can be of any further assistance then please do not hesitate to contact me.

Yours sincerely



Lynda Ramscar
Integrated Risk Manager

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Direct dial : 01522 582311

Enc.



Hawthorne Road Action Group (HRAG) work – LFR travel times before and after Eastern Bypass:

Using the FSEC toolkit, LFR have modelled the 1st stage of the proposed Eastern Bypass to perform comparisons at four strategic locations.

The four locations chosen for this pre-emptive consultation work were:

- Reepham primary school – Road junction number = 16337
- Fiskerton primary school – Road junction number = 19196
- Cherry Willingham primary school (Top half of village) – Road junction number = 40064
- Cherry Willingham primary school (Bottom half of village) – Road junction number = 16284

The following table gives a breakdown of the comparisons for both the FSEC Basecase (Prior to the Bypass) and the HRAG Model (taking into consideration the Bypass). The same locations were chosen from each model and then the travel times from Lincoln North (C19) and Lincoln South (C20) Fire Stations were used.

	HRAG C19	Basecase C19	HRAG C20	Basecase C20	+ / - time
Reepham 16337	5m 49s	5m 49s	7m 52s	7m 52s	None
Fiskerton 19196	8m 25s	9m 37s	9m 13s	10m 37s	C19 = 1m 12s – C20 = 1m 24s –
Cherry Willingham (Top) 40064	5m 37s	6m 23s	7m	7m 30s	C19 = 46s – C20 = 30s –
Cherry Willingham (Bottom) 16284	6m 11s	6m 49s	6m 19s	7m 43s	C19 = 38s – C20 = 1m 24s –

The Reepham example used the A158 in both FSEC models; hence the same results being output.

Results were also obtained from FSEC with regards the Dwellings Model, again a comparison was performed prior to the road network being modified to reflect the new Eastern Bypass and after the new road had been modelled.

The County of Lincolnshire has since the 2011 Census had an increase of statistical boundaries called Output Areas (OA's). Prior to the 2011 Census there was 2264 OA's, but with the development of numerous new housing estates and an increase in population there has also had to be an increase in the amount of OA's from the 2264 to 2348.

FSEC uses a multitude of data elements to ascertain risk for the 4 distinct models, but the main model used as a comparison for this work is the Dwellings Model.

A count is performed to see what the risk level of each Output Area is currently (Basecase) and then when any alterations are made to the Basecase, the HRAG bypass work for example another count is performed to see if any changes have occurred and if so further granulation into where and why?

FSEC OA Risk Level	Basecase	HRAG Model	Difference + / -
Very High	1971	1971	None
High	185	185	None
Medium	109	109	None
Low	35	35	None
Very Low	48	48	None

Supporting screenshots for appliance travel time comparisons:

Basecase Model Reepham 16337:

WINGS TEST FRS: Current Dataset: 07TH NOV 2014 PRE INC DATA: Current Overlay: Roads Junctions and Stations; Mode: DETAIL

File Setup Action Edit Overlay Find Scale Maps Measure Dump Road Network Risk Assessment Response Vehicles and Scenarios Modelling Documentation Fire Alarms No

Road Junction

Road Junction Grid Ref: 503845 373645 3:20187 3:20187 3:20187 3:20187

Junction Number: 16337 Junction Name:

Nearest Stations (Travel Time in mins) Genuine Dead End Station Key

Station	C19	C20	C38	C35	C27	C29
Travel Time	5.49	7.52	10.47	11.84	12.39	12.96

Station	C25	C26	C02	T15	C16	HUMD
Travel Time	17.29	17.38	19.39	21.98	22.18	24.69

Station	T13	C08	C13	T16	C31	C04
Travel Time	24.82	25.03	25.19	25.64	25.74	25.88

Station	C09	C05	C37	C22	T11	T12
Travel Time	27.17	27.18	27.97	29.10	29.95	30.35

Station	HUMD	C33	HUMD	C14	HUMC5	HUMD
Travel Time	31.56	33.64	34.70	34.78	36.31	38.16

Station Key

- C13 GAINSBOROUGH Insi
- C25 MARKET RASEN Insi
- C09 CAISTOR Insi Brigad
- C05 BINBROOK Insi Briga
- C22 LOUTH Insi Brigade
- C23 MABLETHOPRE Insi
- C01 ALFORD Insi Brigade
- C30 SKEGNESS Insi Briga
- C33 SPILSBY Insi Brigade
- C36 WAINFLEET Insi Brig
- C28 NORTH SOMERCOTE
- C16 HORNCASTLE Insi B
- C37 WOODHALL SPA Insi
- C26 METHERINGHAM Insi
- C04 BILLINGHAY Insi Brig
- C35 WADDINGTON Insi f
- C27 NORTH HYKEHAM Ins
- C29 SAXILBY Insi Brigade
- C02 BARDNEY Insi Brigad
- C38 WRAGBY Insi Brigad
- C19 LINCOLN NORTH Insi
- C31 SLEAFORD Insi Briga
- C08 BRANT BROUGHTON
- C14 GRANTHAM Insi Briga

View All

DLG version 1-1

Ok Cancel

HRAG Model Reepham 16337:

WINGS TEST IFS, Current Dataset: 15 DEC 2014 | HAWTHORNT ROAD: Current Overlay: Roads Junctions and Stations: Mode: DETAIL

File Setup Action Edit Overlay Find Scale Maps Measure Dump Road Network Risk Assessment Response Vehicles and Scenarios Modelling Documentation Fire Alarms Non-gas

Road Junction

Road Junction Grid Ref: 503845 373645 3:20187 3:20187 3:20187 3:20187

Junction Number: 16337 Junction Name: _____

Nearest Stations (Travel Time in mins) Genuine Dead End Station Key

Station	C19	C20	C38	C35	C27	C29
Travel Time	5.49	7.32	10.47	11.84	12.39	12.96

Station	C25	C26	C02	T15	C1E	C31
Travel Time	17.29	17.39	19.39	21.98	22.18	24.22

Station	HUMD	T 3	C08	C13	T1E	C04
Travel Time	24.69	24.82	25.03	25.19	25.64	25.88

Station	C09	C05	C37	C22	T11	T12
Travel Time	27.17	27.18	27.97	29.10	29.95	30.35

Station	HUMD	C33	HUMD	C14	HUMC5	C03
Travel Time	31.56	33.64	34.70	34.78	36.31	36.67

View All

DLG version 1-1

Ok Cancel

Map labels: Reepham Menor, Cricket Ground, Leigh Farm, Dairy Farm, Reepham, Meadow Lane (Track), Path, Hall 21m, LC, PO.

Basecase Model Fiskerton 19196:

WINGS TEST FRS - Current Dataset : 07TH NOV 2014 - PRE INC DATA - Current Overlay: Roads Junctions and Stations - Mode: DETAIL

File Setup Action Edit Overlay Find Scale Maps Measure Dump Road Network Risk Assessment Response Vehicles and Scenarios Modelling Documentation

Road Junction

Road Junction Grid Ref 505131 372092 3.23579 3.23579 3.23579 3.23579

Junction Number 19196 Junction Name

Nearest Stations (Travel Time in mins) Genuine Dead End Station Key

Station	C19	C20	C38	C35	C27	C02
Travel Time	8.97	9.97	13.95	14.29	14.84	15.67

Station	C29	C26	C25	T15	C16	C37
Travel Time	15.96	19.83	20.77	24.43	25.29	26.49

Station	C08	T13	T16	HUMD	C31	C04
Travel Time	27.48	27.82	28.09	28.17	28.19	28.33

Station	C13	C09	C05	C22	T12	T11
Travel Time	28.67	30.65	30.66	32.58	33.35	33.43

Station	HUMD	C33	C14	HUMD	HUMC5	C03
Travel Time	35.04	36.75	37.23	38.18	39.79	40.64

Station Key

- C13 GAINSBOROUGH Inside Brig
- C25 MARKET RASEN Inside Brig
- C09 CAISTOR Inside Brig
- C05 BINBROOK Inside Brig
- C22 LOUTH Inside Brig
- C23 MABLETHOPRE Inside Brig
- C01 ALFORD Inside Brig
- C30 SKEGNESS Inside Brig
- C33 SPILSBY Inside Brig
- C36 WAINFLEET Inside Brig
- C28 NORTH SOMERCOTE Inside Brig
- C16 HORNCastle Inside Brig
- C37 WOODHALL SPA Inside Brig
- C26 METHERINGHAM Inside Brig
- C04 BILLINGHAY Inside Brig
- C35 WADDINGTON Inside Brig
- C27 NORTH HYKEHAM Inside Brig
- C29 SAXILBY Inside Brig
- C02 BARDNEY Inside Brig
- C38 WRAGBY Inside Brig
- C19 LINCOLN NORTH Inside Brig
- C31 SLEAFORD Inside Brig
- C08 BRANT BROUGHTON Inside Brig
- C14 GRANTHAM Inside Brig

View All

HRAG Model Fiskerton 19196:

WINGS TEST FRS - Current Dataset - 1ST DEC 2014 - HAWTHORNE ROAD - Current Overlay: Roads Junctions and Stations - Mode: [unintelligible]

File Setup Action Edit Overlay Find Scale Maps Measure Dupl Road Network Risk Assessment Response Vehicles and Scenarios Modelling [unintelligible]

Map navigation toolbar with icons for pan, zoom, and other map controls.

Road Junction

Road Junction Grid Ref 505131 372092 3:23579 3:23579 3:23579 3:23579

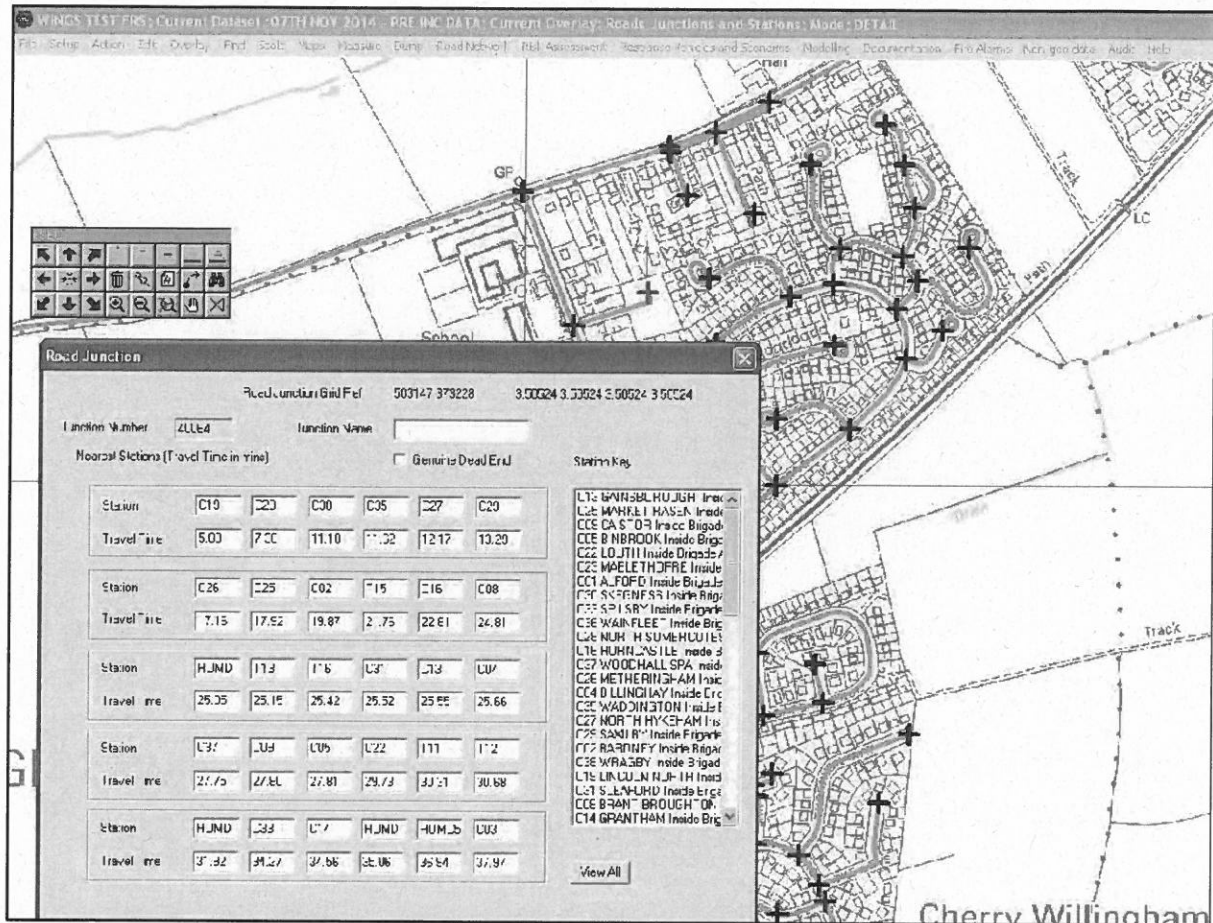
Junction Number Junction Name

Nearest Stations (Travel Time in mins) Genuine Dead End Station Key

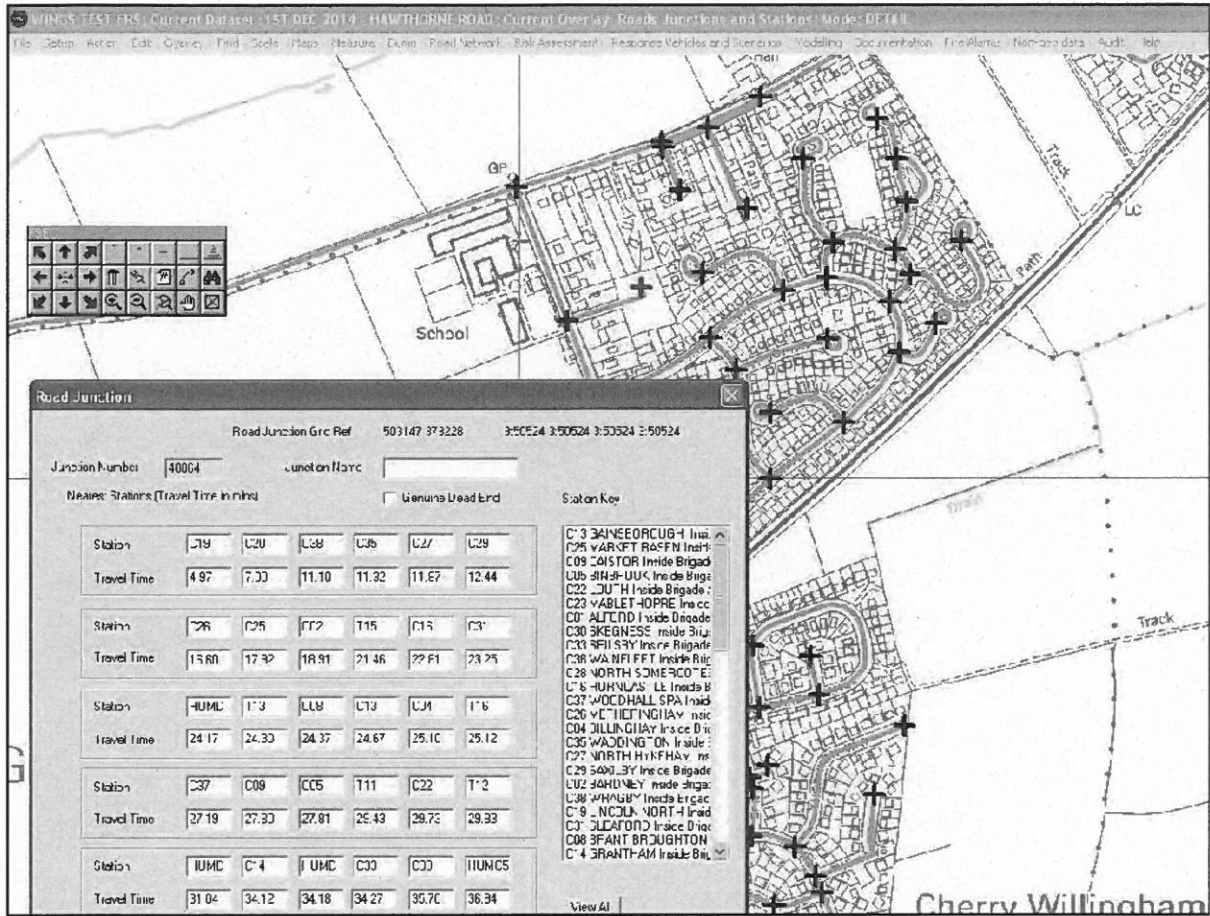
Station	C19	C20	C35	C27	C38	C02
Travel Time	8.25	8.73	12.99	13.60	13.95	15.67
Station	C29	C26	C25	T15	C31	C16
Travel Time	15.72	18.14	20.77	23.19	24.79	25.29
Station	C08	C37	C04	T16	HUMD	T13
Travel Time	25.91	26.49	26.64	26.85	27.45	27.58
Station	C13	C09	C05	C22	T11	T12
Travel Time	27.95	30.65	30.66	32.58	32.71	33.11
Station	HUMD	C14	C33	C03	HUMD	HUMC5
Travel Time	34.32	35.66	36.75	37.24	37.46	39.79

- C13 GAINSBOROUGH Inside Brig
- C25 MARKET RASEN Inside
- C09 CAISTOR Inside Brigad
- C05 BINBROOK Inside Brige
- C22 LOUTH Inside Brigade
- C23 MABLETHOPRE Inside
- C01 ALFORD Inside Brigade
- C30 SKEGNESS Inside Brig
- C33 SPILSBY Inside Brigade
- C36 WAINFLEET Inside Brig
- C28 NORTH SOMERCOTE
- C16 HORNCastle Inside B
- C37 WOODHALL SPA Inside
- C26 METHERINGHAM Insc
- C04 BILLINGHAY Inside Brig
- C35 WADDINGTON Inside E
- C27 NORTH HYKEHAM Ins
- C29 SAXILBY Inside Brigade
- C02 BARDNEY Inside Brigad
- C38 WRAGBY Inside Brigad
- C19 LINCOLN NORTH Insc
- C31 SLEAFORD Inside Brige
- C08 BRANT BROUGHTON
- C14 GRANTHAM Inside Brig

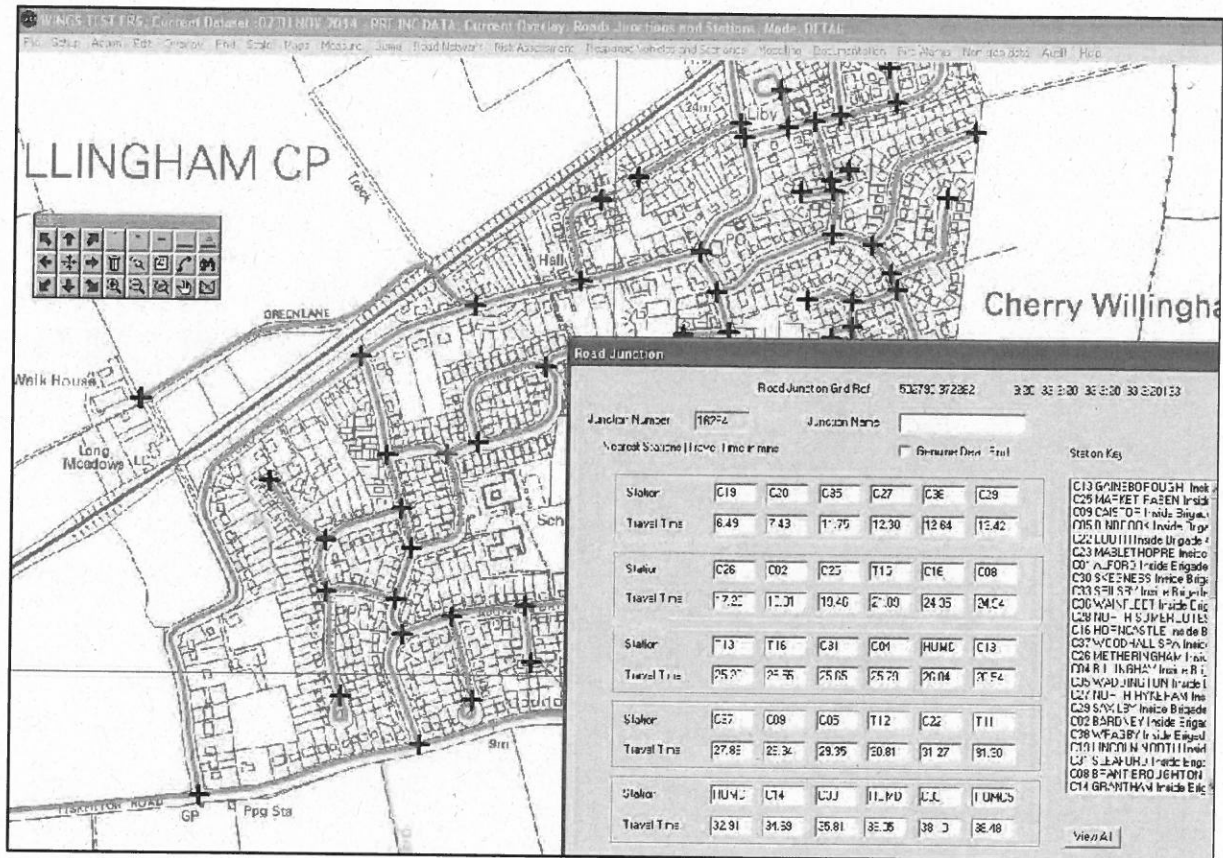
Basecase Model Cherry Willingham (Top Half) 40064:



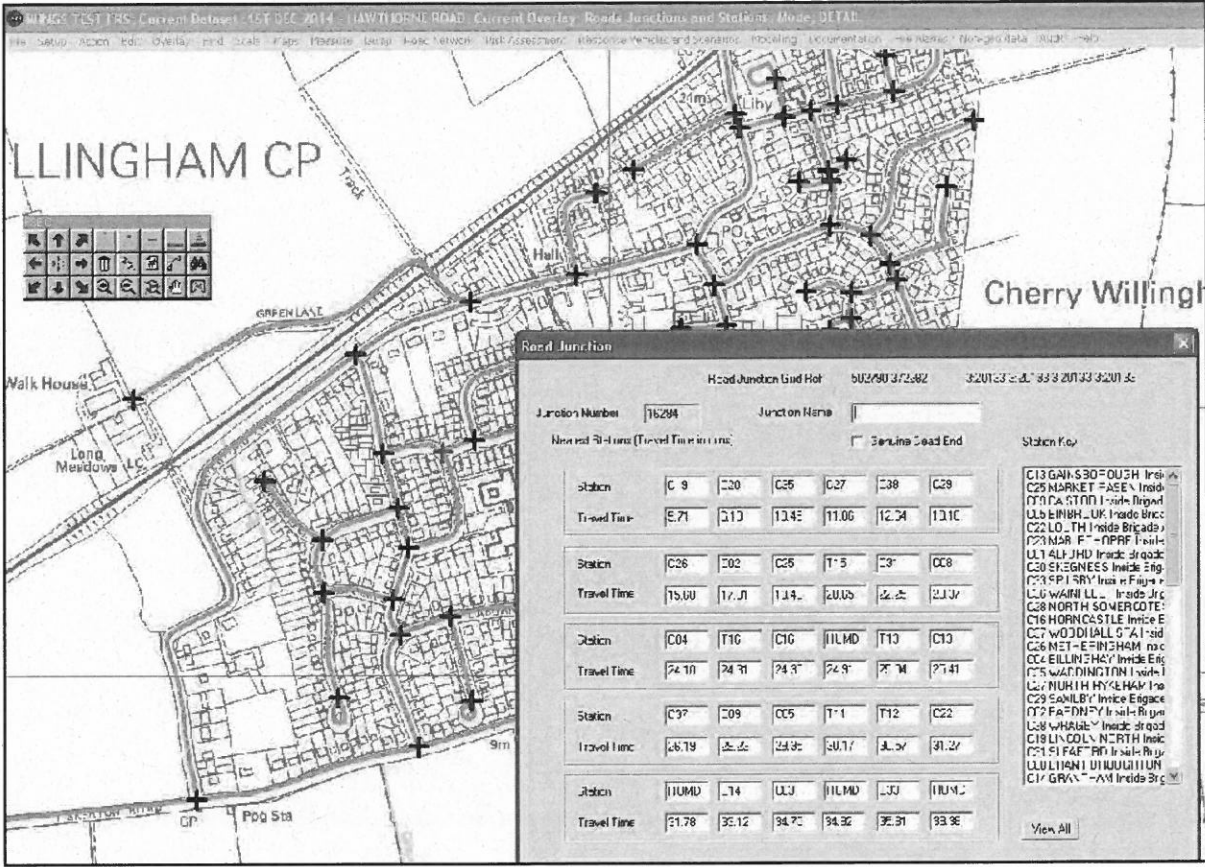
HRAG Model Cherry Willingham (Top Half) 40064:



Basecase Model Cherry Willingham (Bottom Half) 16284:



HRAG Model Cherry Willingham (Bottom Half) 16284:



The screenshot shows the HRAG software interface. The main window displays a map of Cherry Willingham with several road junctions marked with black crosses. A 'Road Junction' dialog box is open in the foreground, showing details for junction 16284. The dialog includes a grid of junctions and their travel times in seconds.

Junction Number	16284	Junction Name				
Station	C 9	C20	C25	C27	C38	C28
Travel Time	10.71	11.11	11.45	11.06	12.24	12.11
Station	C26	C02	C25	T 5	C3	C08
Travel Time	15.60	17.71	11.11	14.05	12.11	21.31
Station	C04	T16	C16	T11MD	T13	C13
Travel Time	24.11	24.71	24.9	24.9	27.71	27.41
Station	C37	C09	C05	T 1	T12	C22
Travel Time	18.19	12.11	24.9	20.71	12.11	19.21
Station	T11MD	T 14	T13	T11MD	T13	T11MD
Travel Time	31.78	35.12	34.71	34.31	35.31	33.31

The dialog also shows a list of station names on the right side, including C13 GAINSBOROUGH, C28 MARKET FASEL, and others. A 'View All' button is located at the bottom right of the dialog.



East Midlands Ambulance Service

NHS Trust

Our Ref: AJH/CJS
Please ask for: Andy Hill
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Mr L Rowley
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Highways Alliance
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Lincoln LN1 1YT

TECHNICAL SERVICES PARTNERSHIP		
FILE #		
32 FEB 2015		
ALLOC	INITIALS	DATE

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Telephone: 01522 832601
Fax: 01522 546834

20th February 2015

Dear Mr Rowley

Re: Lincoln Eastern bypass – Closure of Hawthorn Road

In July 2011 EMAS responded to the stakeholder consultation regarding the above. My predecessor advised that EMAS fully supported the plans to extend the bypass and his response is enclosed for your information.

In November 2014 EMAS was contacted by the Hawthorn Road Action Group which expressed concerns regarding the proposal to close access from Hawthorn Road to the bypass. EMAS has liaised closely with Lincolnshire Fire and Rescue (LFR) to identify the issues specifically around the closure of the Hawthorn Road access and evaluate any associated consequences. EMAS deploys resources from very similar locations as LFR; consequently the data in relation to travel time/distance applies to both organisations.

The Fire Service has conducted some modeling using the Fire Service Emergency Cover Toolkit and the outcome based on the modeling is as follows:-

Travel times from EMAS deployment location sited at Waitrose (A46), Bishops Court, Outer Circle Road.

- To Reepham – no change
- To Fiskerton – travel time improved
- To Cherry Willingham (Top) – travel time improved
- To Cherry Willingham (Bottom) – travel time improved

The closure of the Hawthorn Road access does not affect return journeys from the above locations to Lincoln County Hospital.

I am, therefore, in a position to advise that EMAS fully supports the proposals as outlined in the letter sent in 2011 and the closure of the Hawthorn Road access will have no negative impact on EMAS response to patients requiring time critical assistance.

I understand that the Fire Service are forwarding the modeling work, consequently I have not included it in this correspondence.

I hope this information is helpful and please do not hesitate to contact me if you have any concerns.

Yours sincerely



Andy Hill
General Manager (Lincolnshire Division)



East Midlands Ambulance Service **NHS**

NHS Trust

Our Ref: PJ/RS
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13 July 2011

Mr D Skeet
Senior Project Leader
Technical Services Partnership
Lincolnshire County Council
Witham Park House
Waterside South
Lincoln LN5 7JN

Dear David

Re: Lincoln Eastern Bypass, Stakeholder Consultation Process

I am responding on behalf of East Midlands Ambulance Service NHS Trust regarding the above. In general EMAS welcomes any initiative which supports speedy access to patients within the community and onward transportation to places of definitive care. Specific comments are as follows:

- *What are the key problems and constraints on your business/organization resulting from the current transport situation?*

Traffic congestion both north and south of the city at peak times impacting upon EMAS ability to respond to patients within required timescales. EMAS currently deploys resources to standby sites at various locations within Lincoln City boundary to mitigate against congestion related delays. Problems will occur, however, when resources at north or south of the City are fully utilized and EMAS is required to respond across town to emergencies. On such occasions problems are encountered on Broadgate due to traffic congestion and road width, which can result in delays of a few minutes pending lights changing to green.

EMAS is also required to transport patients between various hospital sites. Extended journey times can be experienced during transfers from Grantham Hospital to Lincoln County Hospital at peak times. This is due to the location of Lincoln County Hospital and the route taken. Whilst these are not necessarily time critical for all patients, the additional time taken by EMAS resources to complete the transfer and be available for further details does have a consequent effect on EMAS capacity at certain times of the day.

The eastern bypass would free up valuable EMAS resource time by eliminating the delays currently experienced on Cross o'Cliff Hill, Canwick Road, Broadgate and Lindum Road.

- *How will the Eastern Bypass address these problems and constraints?*

EMAS covers a wide geographical area and is required to meet very strict response time targets. Anything which impacts on capability to respond within specific timeframes has a consequent impact on patient care. Whilst EMAS plans for congestion, EMAS is required to operate within the Highway Code, consequently the use of blue lights and sirens only applies to time critical events – travelling to 999 calls or blue light transportation. Where a patient has been attended and requires transportation to hospital, but does not meet blue light criteria, EMAS is required to operate within the Highway Code and has no exemptions. This can result in journey time being increased due to traffic congestion which has a knock on effect to future calls.

- *What will Lincoln Eastern Bypass do to help you achieve your goals and objectives?*

Support speedy response to emergencies and reduce transportation time.

- *What direct benefits will the scheme have for your business/organization?*

Support response time targets and free up EMAS resources by reducing time taken per patient episode.

- *Are there any actions and plans you would expect to implement when the bypass is built that you would be unable to undertake without the scheme?*

EMAS is constantly reviewing its service delivery model to ensure patients receive a timely response. Without this scheme EMAS will continue to deploy resources north and south of the City to offset congestion problems. There will, however, be occasions when EMAS resources will be required to respond across the City and this will impact on response times during periods of congestion. The issues related to transportation and inter hospital transfers will continue pending a bypass being in place.

- *Are there any specific benefits, especially related to economic regeneration that you would expect to see as a result of the scheme?*

Unable to comment at this time.

- *What will be the negative effects on your business/organisation if the scheme cannot be built?*

Delayed response and delays in transfer to places of definitive care due to traffic congestion.

Please do not hesitate to contact me should you require any further information or clarification.

Yours sincerely

Pete Jones
Assistant Director of Operations



LINCOLNSHIRE ROAD SAFETY PARTNERSHIP
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11th February 2015

Mr Lee Rowley
Communities, Highways and Traffic
Technical Services Partnership
5th Floor
Mill house
Brayford Wharf North
LINCOLN
LN1 1YT

Dear Mr Rowley


RE: PROPOSED EASTERN BYPASS OF LINCOLN

Thank you for the opportunity to comment on the proposed eastern bypass in Lincoln on behalf of Lincolnshire police. The position of Lincolnshire police remains the same as that articulated by Chief Superintendent Hardy in his letter of 7th of July 2011. Namely, that we whole heartedly support the principle of having the bypass and that it would improve police response times overall.

I am aware that the proposals include the closure of Hawthorn Road and introduction of a restricted move junction. This closure and introduction of a restricted move junction is a matter for the appropriate authorities and local democracy and not the police, so we take the position of neutrality in relation to this.

I have considered the Hawthorn Road closure, and proposed junction, in respect of police response times to villages such as Cherry Willingham. In my professional judgement these specific parts of the proposal would have little effect on police response times.

Yours sincerely


Inspector Simon Heads

TECHNICAL SERVICES PARTNERSHIP		
FILE		
13 FEB 2015		
ALLOC	INITIALS	DATE



www.lincs.police.uk